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California GARDEN

42nd ANNUAL ORCHID SHOW

"Parade of Orchids"

PRESENTED BY SAN DIEGO COUNTY ORCHID SOCIETY

March 18, 19 & 20, 1988

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PUBLICATION STAFF
EDITOR
Elizabeth B. Glover
EDITOR EMERITUS
Allethe Macdonald
ASSOCIATE EDITOR
Grace Boyer
Skipper Cope
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Barbara Jones
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STAFF WRITERS
Penny Bunker
Carol Greentree
Mary Lou Orphey
Marian Lemen Sandy
Allison Voss
Tineke Wilders
COORDINATORS
Advertising—Jo Ann Gould
Circulation— Roy Jones
Jo Rathmann
SALES REP
Dr. Donald Boyer 442-4242
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By Glory A. Kemper
Woodstock, Illinois 60098

VOLUNTEER COMPUTER PROGRAMMER CONSULTANT needed to help choose and operate a computer for San Diego Floral Association. Call 232-5762 to volunteer your services.

ELSIE HARTGER signed up at Del Mar Fair on June 28, 1987 for membership in San Diego Floral Association, but failed to give us her address or phone number. If anyone knows her, have her contact Floral Office 232-5762 so we can start her membership.

Subscriptions to CALIFORNIA GARDEN for one year include six issues of the magazine, since it is put out bi-monthly. On your mailing label, if you are a subscriber, it shows a number indicating the issue which you first received and the year your subscription is due for renewal. If your label reads 6—88, it means you started with the issue number 6 (NOV/DEC) and it expires with the issue 5 (SEPT/OCT) in 1988. 1—88 indicates you started with issue Number 1, the JAN/FEB issue, and it expires when you receive Issue Number 6, NOV/DEC issue in 1987.
If you have a membership in San Diego Floral Association, on the mailing label it shows after your name # plus the month you started and year membership should be renewed. If your label shows # 12/87, it indicates you started with the NOV/DEC issue and your last copy of the magazine with that membership would be the SEPT/OCT issue in 1987. Renew early to receive the next issue.

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HORTICULTURE CALENDAR

*San Diego Floral Association Event

December 18, 19, 20
Christmas Show. Flower arranging and wreath making demonstrations, holiday entertainment, exhibits of Christmas customs of other countries, display of holiday crafts and ornaments, models in Victorian costumes strolling through the show. Los Angeles State and County Arboretum, Arcadia, CA 9-4:30 p.m.
***FREE FLORAL CRAFTS INSTRUCTION WORKSHOP** each Thursday 10 a.m.-3 p.m. in San Diego Floral Library, Room 105, Casa del Prado, Balboa Park. Info: 232-5762.
***FLOWER ARRANGING CLASSES ARE BEING SCHEDULED FOR FEBRUARY 1988.** Call Marie Walsh 298-5182 for dates and reservations.
January 2, 1988
***San Diego Floral Association Tour** to see Rose Parade Floats. Leaves Organ Pavilion lot 8 a.m., returns abut 6:30 p.m. $14.00 per person. Deadline date for reservations 22 December. Send reservations and check to San Diego Floral Associaton, Casa del Prado, Balboa Park, San Diego, CA 92101-1619. Phone 232-5762 for info.
January 4-February 22
Photography for Landscape Architects, a six-session UCLA Extension Workshop on Mondays, 7-10 p.m., in Room A-567, Franz Hall, UCLA for a fee of $155. Instructor is Phil Bedel. For details call the Department of Arts, (213) 825-9414.
January 9
Rose Pruning Demonstration at Descanso Gardens, La Canada Flintridge. Mr. George Lewis will demonstrate methods of pruning. Bring your shears to the 5-acre rose garden for some practical pruning tips. 1-4 p.m.
January 9, 16, 23, 30
Alice Asmar's Watercolor Painting and Sketching Classes. Paint your favorite flowers. Descanso Gardens, La Canada Flintridge Ca. Registration no later than 26 Dec. Fee $17.00. 10 a.m.-12 p.m.
January 10
Rose Pruning Demonstration, lecture, and slide show, hands-on pruning. Miniature roses for sale. South Coast Botanic Garden, Palos Verdes Peninsula, CA 2-5 p.m.
January 16
Rose Pruning Demonstration sponsored by Poway Valley Garden Club at Lake Poway Rose Garden, off Espola Road at Lake Poway Drive, 11 a.m. Info: (619) 748-1978.
January 17
Fruit Tree Pruning Demonstration with lecture by Dr. Jean Natter on proper pruning. Demonstration of individual pruning techniques for apple, pear, peach, and apricot trees by California Rare Fruit Growers. South Coast Botanic Garden, Palos Verdes Peninsula, CA 2 p.m.
January 18-March 13
Botanical Illustration taught by Irina Gronborg on Monday mornings, 9 a.m. till noon, at the Athenaeum School of the Arts, 1008 Wall Street, La Jolla, CA 92037, (619) 454-5872. Open to all levels. 8 week course.
January 18-21
International Garden Trade Fair (VTB) 1988 will be held at the Jaarbeurs Exhibition Center in Utrecht, Holland. It will be open daily 10 a.m. to 6 p.m.
January 23, 24
Camellia Show sponsored by the South Coast Camellia Society featuring hundreds of camellias at the annual two-day show. South Coast Botanic Garden, Palos Verdes Peninsula, CA. Sat: 1-4:30 p.m., Sun: 11 a.m.-4:30 p.m.
January 27
PWHLA (Professional Women's Horticulture and Landscape Association) meeting. Info: (619) 753-1545.
January 31
Taste Changes in Garden Design. Landscape designer Phyllis Thomas will talk about "what's in and what's out" in garden designs. A slide show, books, and magazines will enhance the lecture. South Coast Botanic Garden, Palos Verdes Peninsula, CA. 2 p.m
February
***FLOWER ARRANGING CLASSES** scheduled for this month. Contact Marie Walsh, (619) 298-5182 for dates and reservations.
February 5-7
Farm Conference '88, El Rancho Tropicana, Santa Rosa, CA. Over 40 workshops, trade show of production and marketing equipment, tour of small wineries, and all day tour of traditional farms. Info and registration, call (805) 683-3534 or (916) 752-6690.
February 6
The Village Garden Club of La Jolla invites you to share a day with Linda Teague, noted flower arranger and instructor, at San Diego Hilton Hotel on Mission Bay. Social hour 11 a.m. Luncheon 11:45 a.m., Program 1 p.m., Cost $23.00. Reservations: (619) 459-2279, or write to Jananne Kennedy, 5550 Warbler Way, La Jolla, CA 92037.
February 6, 7
San Diego Camellia Society's 41st Annual Spring Show. Casa del Prado, Room 101, Balboa Park. Sat: 1-5 p.m., Sun: 10-4 p.m. Free.
February 7
Fuchsia Culture and Pruning, South Coast Botanic Garden, Palos Verdes, CA. 2 p.m. Bring your fuchsias for pruning.

February 12-21
42nd ANNUAL DATE FESTIVAL, at Date Festival Fairgrounds, Indio, CA Admission charge. Indio Date Festival, P.O. Drawer NNNN, Indio, CA 92202 (619) 342-8247.

February 13
Orchid and Specialty Plant Sale at the Los Angeles State and County Arboretum, Arcadia.
Sat. 10 a.m. to 4 p.m.

February 14
Camellia and Azalea Care by members of the South Coast Camellia Society South Coast Botanic Garden, Palos Verdes Peninsula, CA. 2 p.m.

February 16
***San Deigo Floral Association's Meeting,** Casa del Prado, Room 101, Balboa Park. Dinner 6 p.m. Program 7:30 p.m. Reservations for dinner call 232-5762. Program free to all. "Proteas: How to Grow and Show in San Diego" by Velma and Keith West assisted by Shirl and Bob Eastman.

February 20-21
San Diego County Orchid Society's Spring Mini Show, Casa del Prado, Room 101, Balboa Park. Sat: 12-4:30 p.m.; Sun: 10-4:30 p.m. Free.

February 20-21
Camellia Show. The Temple City Camellia Society will celebrate its 50th Anniversary show. Over 2,500 flowers will be displayed. Sat: 1-4:30 p.m.; Sun: 9:30-4:30 p.m. Los Angeles State and County Arboretum, Arcadia, CA.

February 21
Soil Preparation for Successful Gardens lecture by Dr. Jean Natter, 2 p.m. South Coast Botanic Garden, Palos Verdes, Peninsula, CA.

February 27-28
Camellia Show at the Southern California Camellia Council competition. Descanso Gardens, La Canada Flintridge, CA. Sat: 1-4:30 p.m.; Sun: 9:30-4:30 p.m.

February 27-28
Orchid Show and Sale by South Bay Orchid Society, at the Torrance Recreation Center, 3341 Torrance Blvd., Torrance, CA. Handicapped and Photographers will be admitted Sun 10-11 a.m. Public may enter plants for competition. Registration Fri. 3-9 p.m.; Judging Sat. 10-noon; Show open Sat. 1-8 p.m.; Sun. 11-5 p.m. Adults: $2.00, Seniors $1.50, Students with ID $1.00.

February 27-28
Ohara School of Ikebana 11th Annual Show. Casa del Prado, Room 101, Balboa Park. Sat: 11-4:30 p.m.; Sun: 10-4:30 p.m. Fee.

February 28
Houseplants - Old and New. Ruth Pease will demonstrate arrangements for patio and indoor plants. Plants for sale. South Coast Botanic Garden, Palos Verdes Peninsula, CA.

March 5, 6
Daytime African Violet Show, Casa del Prado, Room 101, Balboa Park. Sat: 1-5 p.m.; Sun: 10-4 p.m. Fee.

March 9, 10
Green Show '88 "The Color of Tomorrow", a trade and equipment show in the Floriculture Pavilion and adjoining grounds at the Del Mar Fairgrounds, Del Mar, CA. Info: Contact Andy Mauro, Green Show '88, Del Mar Fairgrounds, Del Mar, CA 92014, (619) 755-1161.

March 19
21 day Himalayan Trip from Seattle, to visit orchid growing areas of India, Sikkim, and Nepal, plus stops in Bangkok, Varanasi, New Delhi and Agra. Escorted by Paul Gripp, noted Santa Barbara, CA. authority on orchids. $3650 per person, double occupancy. Odyssey Tours of Santa Monica. Info: 800-654-7975.

March 19, 20
20th Annual Ikebana Show by Ikebana International, San Diego Chapter 119 at Casa del Prado, Room 101, Balboa Park. Free.

March 23
PWHLA (Professional Women's Horticulture and Landscape Association) Meeting. Call (619) 753-1545 for information.

March 26, 27
Balboa Park African Violet Society's 13th Annual Show at Casa del Prado, Room 101, Balboa Park. Sat: noon-5 p.m.; Sun: 10-4 p.m. Free.

March 26-April 1
Charter Boat Trip with botanists, ornithologists, and naturalist to Guadalupe and Cedros Island of coastal Baja California Mexico. Info: (619) 726-2228.

April 1
English Antique Buying Trip to England for 16 days. Ivy House Antiques, 405 W. Washington St., Suite 310, San Diego, CA 92103. (619) 297-1413 Ext. 310.

April 7-17
Do-It-Yourself RAI 88 exhibition at the RAI International Exhibition Centre in Amsterdam, Holland.

April 9 and 16
Garden Club of Charleston, South Carolina Spring House and Garden Tours $12.00. Info: Mrs. Harold L. Glover, 4020 Bohicket Road, John's Island, SC 29455.

April 15-17
San Diego Home/Garden Magazine's Spring Home Garden Show at Del Mar Fairgrounds, Del Mar, CA.

April 22, 23, 24
Hydroponic Society of America's Annual Conference and Trade Show at the Clarion-San Francisco Airport Hotel. Public invited. Includes bus tour to Sonoma County hydroponic greenhouses, a tour of Luther Burbank's home, lunch at a local winery, also topics by prominent speakers. Info: Mr. Gene Brisbon, Executive Director, P.O. Box 6067, Concord, CA 94524, or call (415) 682-4193.

April 28
Holland Tour led by garden writer, Tineke Wilders, to her native country to visit the world's largest flower market at Aalsmeer, the Keukenhoff gardens and a visit to tulip grower Frans Roozen. Info: (619) 299-3010.

May 20-29
Great English Gardens, the Chelsea Flower Show Tour, and membership in the Royal Horticultural Society. Info: (619) 299-3010.

Dates

By Barbara S. Jones

Winter in southern California is "date" season. Although dates are harvested from late August through January, they become less expensive, and are more plentiful at this time. Also, it is a pleasant season to visit the date growing areas.

Scientifically speaking, the date is a drupe - a fruit covered by a hard endocarp (the skin); with a mesocarp (the soft part that we eat along with the skin); and a central seed (we don't eat that).

The commonly known commercial food date, **Phoenix dactylifera**, grows only in desert, or semi-desert regions of the world. In North Africa and in Baja California, they are an important source of nutritious food. In the United States, dates are eaten primarily as a "sweet", alone, or in candies, desserts, or breads.

These apparent natives of the dry arid regions of North Africa and the Middle East were introduced to the Western World in the late 18th century by the Spanish missionaries. Today, in the United States, dates are commercially grown in southern California, Arizona, and Texas where there are high temperatures during the growing and ripening season. Trees can withstand a few degrees of frost, but a temperature below 20°F, for longer periods will kill the leaves, and eventually the tree. At this time there are approximately 5,500 acres of date plantations in the U.S.A.; 5,000 of these are in California's Coachella Valley.

In the early 1900's, there were a number of "date pioneers" in California. The crop really became important after 1927, when a group of growers in conjunction with the U.S. Department of Agriculture imported 26,000 date offshoots of the 'Deglet Noor', 'Halawy', 'Khadrawy', 'Kustawy', 'Zahidi', and 'Medjool' varieties.

Dates can be grown from seed. (Many organic gardeners report date trees growing in their compost pits.) Approximately 65%-85% of seedling date trees are male, and the female trees produce inferior fruit. (The date is dioecious - male, staminated, flowers on one tree; female, pistillated, flowers on the other.) In nature, the trees are wind pollinated but, for centuries, the trees have been hand pollinated: a piece of male staminated inflorescence is tied to a female cluster. One male tree produces enough pollen for approximately 49 female trees.

All commercial plantings are done in the spring with three to six year old offshoots (suckers); small plants formed at the base of older palms. Offshoots are the same sex as the parent plant. Trees are planted about 30 feet apart. Female trees will begin fruiting in five to six years, and will reach maximum production in 15-18 years.

NATIONAL DATE FESTIVAL — Photo by Pat Ziebarth

The bearing capacity is determined by the number of green leaves. A healthy, mature palm will produce from 12-15 bunches per year, and each bunch produces about 20 pounds of dates.

Mature, ripe dates are hand picked from shorter trees, but whole clusters (bunches) are cut from taller trees that grow to a height of 60 feet. Whole clusters can be cut early and placed in a warm place to fully ripen. After picking, the dates are taken to processing areas where they are fumigated, cleaned, sized and separated into grades, and inspected by U.S.D.A. inspectors.

At the end of the harvest season, the later part of February, the annual ten day National Date Festival is held in Indio, California.

If you are in the Coachella Valley there are several plantations that allow visitors. One of these is the Oasis Date Gardens in Thermal, south of Indio. One can take a driving tour through the 250 acre plantation, see a movie about date growing, enjoy a cactus garden and displays, and have 'tastes' at the date shop. It is open all year, but is more fun in the late fall and in winter.

Authors note: Yes, you can eat the dates from the date trees commonly planted in parks, parkways, and yards in the San Diego area. The skins are hard, the seeds are large, and the mesocarp is very thin. We loved them as children and often "ate" our way home from school. Our mother refused to use them for cookies. One time, at our urging, she did try to cook some into a paste for a cake filling. The hard skins would not soften and there was very little left after the pulp was pressed through a screen to remove the skin.

Barbara Jones is former editor of California Garden, past president of the San Diego Floral Association, and a graduate scientist (Botany).

The Succulent Senecios

(Family: Compositae)

By Dorothy Dunn

The genus **Senecio** belongs to the huge Compositae or Daisy family, which is one of the largest of all plant families, with representatives in every continent, and consisting of about 900 genera and more than 17,000 species. It contains three genera which are of special interest to the succulent enthusiast, **Kleinia, Senecio,** and **Othonna.** Although Kleinias and Senecios have been combined and separated repeatedly in botanical literature, the current trend seems to favor grouping them all under Senecio. As a rule, the specific name remains the same, with a few exceptions such as **Kleinia neriifolia** which became **Senecio kleinia,** and **Kleinia tomentosa,** which is now **Senecio haworthii.** The generic name is derived from the Latin word **senex,** which means 'Old Man'.

Although the genus **Senecio** is extremely large, containing about 1300 species, only a small number of these can be considered truly succulent (Jacobsen lists about 115). These consist of many diverse forms which exhibit varying stages of adaptation to drought. Many Senecios are common weeds (**Senecio** is also the Latin name for groundsel or ragwort), and the succulent Senecios are relatives of our native sunflowers, daisies, and thistles. The genus is distributed throughout the tropical and temperate regions of both hemispheres, with the majority of the species being native to North and South Africa, Madagascar, Mexico, the Canary Islands and the East Indies. Their habitats range from rain forests to desert regions and all the areas between. Two of the strangest species, **S. pendula** and **S. deflersii,** come from southern Arabia, and one species, **S. johnstonii,** grows at altitudes of about 12,000 feet on Mt. Kilimanjaro in Tanzania. A number of tree-like but not really succulent species occur in tropical Africa, Tanzania, Kenya, and the Congo Basin. These are sometimes referred to as **Dendrosenecios.**

Senecios are generally grown for their distinctive forms and coloration and texture of foliage rather than for their flowers, which are usually somewhat insignificant. **Senecios** are characterized by their daisy-like flowers — in most cases yellow — while the **Kleinias** are recognized by their thistle-like flowers. If you wish to differentiate between the two genera, this is probably one of the most expedient means of doing so. They range in size and form from low, trailing or vining plants to moderate-sized shrubs. Several of them make excellent hanging-basket subjects (notably the familiar **S. rowleyanus,** as well as **S. radicans, S. herreanus,** and **S. bulbine-folius),** while a few form fantastic caudices, such as **S. fulgens.** Senecios will also occasionally crest; an especially rare and outstanding example is **S. gregorii cristata.** Probably the most beautiful foliage is exemplified by **S. haworthii, S. medley-woodii,** and **S. scaposus,** while credit for the most unique and bizarre form should unquestionably go to **S. pendula:** a mature well-grown clump of this resembles a mass of writhing snakes. **S. anteuphorbium,** as its name implies, is reputedly another antidote for the extreme irritation caused by **Euphorbia** sap. Many Senecios also have a very pungent but not altogether unpleasant odor.

All **Senecios** are tender and need protection from frost. Many will take full sun, but some species look better if given reasonable shade. They also require a well-drained soil and careful watering. As a rule, the deciduous kinds such as **S. articulatus, S. tropaeolifolius, S. gregorii, S. stapeliiformis,** and **S. anteuphorbium,** should not be watered after the leaves have fallen (which is usually our summer). The ones with persistent leaves (or foliage), such as **S. haworthii, S. fulgens,** and **S. scaposus,** rest in winter and should only be watered very sparingly then. Propagation is usually easiest from cuttings, although they can be grown from seed. The principal pest seems to be Aphids.

With such a wealth of diverse shapes, sizes, and colors, **Senecios** deserve much more attention than they usually get. The shrubby and trailing species add impact and interest to many different landscape situations, while most of the smaller ones can be used effectively as pot plants or hanging-basket specimens.

Literature consulted:
Chidamian, Claude:
Book of Cacti and Other Succulents
Haselton, Scott:
Succulents for the Amateur
Higgins, Vera:
Succulents in Cultivation
Jacobsen, H.:
Lexicon of Succulent Plants
Shields, Marjorie:
Desert Flowers Under Glass (**Cactus and Succulent Journal,** March-April, 1960)

Build A Better Bloomer

By Patt Sigg

Do you think of yourself as a flower farmer? "Well, yes and no", responded John Frazee, a sturdy man with a full, neatly trimmed tri-colored beard and gentle blue eyes. "We really farm bulbs and seeds". Standing in the heart of 200 acres of gladiolus fields that slope down to Santa Ysabel Creek east of Lake Hodges, John gestured toward workers hoeing and a tractor being carefully driven down rows of young plants. "This, you might say, is our slow season. Planting is over and harvest is yet to come. That tractor I designed to fertilize eight rows at once - a great improvement over the way we used to do it".

The Frazee family began planting flowers for seed and bulbs in 1928 when Frank Frazee started growing the Tecelote strain of ranunculus. Luther Gage, known as the father of the flower industry in Carlsbad, developed a better blooming bulb and registered his new ranunculus in order to protect the superior strain. Gage gave the rights to his friend Frazee, confident that the distinctive ranunculus would be produced with care and integrity.

Frank Frazee died at the age of 91, still active in the business, leaving a legacy of fine stock and experience to his son, Edwin.

Based in Oceanside, where land, soil and climate provide ideal conditions, Edwin Frazee branched into growing gladiolus, and began hybridizing them with great success and satisfaction. New varieties require about 10 years to produce enough quality bulbs to bring them to market in sufficient quantity to supply demands.

As it happened, in the early 50's coastal lands began to be developed, and Frazee took

a look at other areas. In 1958 the company expanded inland to Fallbrook, and later to San Pasqual Agricultural Preserve. Soil and climatic conditions make the valley ideal for bulb production, and water from wells provides irrigation economically. Sandy soil near the river promotes growth of small

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gladiolus bulbs to be used in red earth fields on the hillsides in a subsequent year. Planted in glads only every other year, each field must be fumigated to eliminate weeds and soil-borne diseases, peculiar to the West, which attack plants and bulbs. Fumigation takes place under plastic sheets, covering entire fields for a 72 hour period. Crops such as sweet potatoes and corn planted in alternate years profit from soil treatment as well.

Whereas in years past over 450 varieties of glads were planted, through careful selection and attention to consumer trends, only 350 different colors, shapes and sizes were put into production this year. After retiring once, Edwin Frazee returned to active participation at age 69. He entrusts planting to no one but himself and his son, John. Each bulb in the 200 acres receives individual attention to assure the best possible start for the meticulously hybridized and carefully selected bulbs. The cycle from planting to market spans 10 months. Fertilizing, cultivating and irrigating demand only a basic crew of 10 employees in the fields. As Fall harvest approaches, workers increase to 150 when more and more tasks must be done.

Flowers take strength from bulbs and so blossoms are sheared off soon after they appear. When bulbs are fully mature, surrounding soil is loosened. Each bulb is lifted from the earth by hand, tops are cut off with scissors to insure a neat appearance, and then they are trucked to the Oceanside warehouse. In moist hot-rooms where temperatures stay at 80 degrees, and humidity reaches nearly 100%, bulbs rest for one week. After hand cleaning and grading, the bulbs then spend another week in a dry hot-room where humidity is low and temps remain at 80 degrees.

Now ready to be hand-polished, packaged and shipped, these special bulbs receive a royal send-off. Color photographs, taken of each named variety of gladiolus, make neat but life-less bulbs more enticing to customers across the country and abroad. New Zealand, where climatic conditions resemble those of Southern California, imports about one million bulbs a year.

Perennially popular as florist's cut flowers, gladiolus are also prized in gardens for strong, long lasting color-effectiveness and versatility. Glads may be grown from bulbs to blooms in just 90 days with hundreds of choices in size and color. But one Frazee salesman is not yet satisfied. He's been heard to say, "Give me a red, white and blue glad that whistles Dixie and bursts into bloom on the Fourth of July, they'll sell like firecrackers". Well, there's a challenge for John Frazee, third generation flower farmer!

From an interview with John Frazee, Edwin Frazee, Inc., 2521 Oceanside Blvd., Oceanside, CA 92054, 757-3240.

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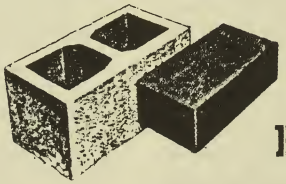

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PREVENTION AND CONTROL OF

ROOT ROT DISEASES

ON GREEENHOUSE CROPS

By C.C. Powell

There are many root rot diseases on greenhouse crops. Common root rot diseases include those caused by: Pythium, Phytophthora, Rhizoctonia, Fusarium, Thielaviopis, and **Cylindrocladium.** Many of these fungal pathogens (disease organisms) also cause crown rot and damping off diseases on greenhouse crops.

With many diseases on many crops caused by many different organisms, the plan as to how to manage root rots can seem quite confusing. How do we figure out management strategies given such a complex picture? The way to do this is by thinking about the "common denominators" of root rot diseases. Begin by thinking about the basic definition of a plant disease. Remember that we must have a host, a pathogen, and an environment that allows the interaction of the pathogen on the host. All three of these elements must be present at the same time, in the same place.

Root rots generally result from the presence of soil-borne pathogens. A single, tiny grain of soil can be contaminated with many root rot pathogenic fungi! Therefore, we can begin planning the management of root rots by thinking about the elimination of pathogens via sanitation of soil and soil associated items. There are several widely used methods of soil sanitation. Without going into detail, let me outline them merely as those methods involving fumigation, and those using mixes that come to you already bagged. The soil sanitizing method that you as a grower will utilize will depend upon the equipment you have available and the physical facilities which you have to do the job. We find that many of our growers are using fumigants such as methylbromide to sanitize soil. This is a method which does not require an outdoor place to construct a soil pile, and some knowledge of the procedure of adding the fumigant to the soil. Bagged soil mixes are generally not really free of root rot pathogens! However, I know of many growers who do not sanitize such soils. Of course, these mixes are usually well aerated and drained so that even if they were contaminated with pathogens, the pathogens may not develop to any great degree.

Sanitation also involves cleanliness regarding soil associated items. Many growers spend good money and time in sanitizing soil, but then proceed to put the crop into dirty, reused pots! Pots, walkways, benches, hoses, water lines, etc. must be sanitized occasionally to make sure they are free of fungal root rotting pathogens. There are many sanitizing agents on the market today. They fall into several chemical groups. Many growers prefer to use phenolic sanitizers, such as Amphyl. On the other hand, some prefer to use those containing quaternary ammonium salts, such as Physan 20. If porous objects, such as clay pots or pieces of lumber are to be sanitized, a sanitizing agent with some fumigation property is advantageous. This is where chlorine, as a 1-10 dilution of household bleach, or formalin as a 1-18 dilution of formaldehyde are common and effective sanitizers. Remember that fumigant sanitizers lose their strength quickly after dilution with water. They must be made up and used immediately.

Pathogens that cause root rot diseases can often gain entry into a greenhouse via contaminated watering ponds, pipes, and other irrigation devices. If you have trouble with the constant appearance of root rot pathogens in an otherwise sanitary greenhouse, you might investigate the contamination levels of the water. These tests are tricky and must be done by clinics. Water treatments using chlorine can be easily done, but would not be prescribed generally unless necessary.

Use of clean stock is another important aspect of sanitation to rid the greenhouses of root rot diseases. Although most crown and root rots are not systemic in the upper portion of the plant, they can be present if they have been splashed up on muddy water droplets or moved up through careless handling. It is this surface contamination of cuttings that leads to root and crown rots! Identify plants that you intend to use as stock early in the production cycle. Treat these plants carefully and give them extra fungicidal sprays to make sure the cuttings derived from them will be clean of root rotting pathogens.

During the actual production of crops, there are many things that growers can do to help prevent and control root rot diseases. Basically, all of these activities involve keeping growing areas clean and tidy. Discard problem plants as soon as they are noticed. They may not actually be infected with root rot, but they can lead to a start of root rot in the crop. Keep walkways clean and free of plant debris. Keep your feet off the benches. Avoid splashing water when watering the crops. Keep the hoses off the ground so that they do not pickup contaminated muddy water from under the benches or near the walkways. Clean up benches between crops so that all plant debris is removed. Clean out the automatic spaghetti tube water devices to free them of fungal pathogens between crops.

After sanitation, we can go back to our disease triangle and think in terms of environmental modification to control root rot diseases. Of course, environmental modification will vary according to the specific disease and pathogen involved. One common denominator here is to avoid plant stress. Stress will lead to a weakened plant which then can be easily infected by any number of root rotting organisms. Specific things to avoid include high salts (which may lead to **Pythium** or **Fusarium** root rot infection); wetness and poor soil aeration (which may lead to **Pythium** and

Phytophthora); dryness, especially between waterings (which may lead to **Rhizoctonia** or **Fusarium);** and cool temperatures (which favors some **Pythium** and **Fusarium** root rots). Compacted soils, hit and miss fertilization programs, and intermittent and uneven watering are all elements of poor plant care that lead to root rot if not corrected. Stress management means setting up a good growing environment and maintaining the stability of that environment.

The host part of the disease triangle is also a point worth investigating when trying to understand how to prevent and control root rot diseases of greenhouse crops. There are some hosts that are particularly prone to certain types of root rot diseases. For instance, some of the poinsettia cultivars are quite susceptible to **Rhizoctonia.** Some seedling geranium cultivars are prone to **Pythium** black leg. African violets and peperomia are often seen with **Phytophthora** crown rot. There is not a geat deal of data on which hosts will be more or less resistant to which crown rot disease. However, many growers have made a series of good observations over the years and have altered their plant lists accordingly.

Use of soil drenched fungicides is also necessary for the prevention and control of some root rot diseases. Think of soil drench fungicides as a fourth line of defense. Effective use of fungicide comes into play after consideration of resistant varieties, stress management, and sanitation measures. We use fungicides for root rot prevention and control as soil drenches. This means that we must first prepare a proper dilution of the fungicide and then water or drench it through the soil thoroughly. In this way, the fungicides can act as a protective barrier on the entire root system of the plant. They may also act as effective irradicants, if there are spots of infected roots within the root mass here or there.

Prevention and control of root rot disease involves truly integrated programs in growing of greenhouse crops. Many of the things you will do to manage root rots are coincident with things that normally a good grower would do to produce a high quality crop ready for sale in the shortest amount of time. Keep in mind the general management strategies I have outlined above and you will not have to be so concerned about specific problems on this or that plant.

Christmas Tree Recycling Program

By Angelica M. Docog

For the sixteenth consecutive year, the San Diego Ecology Centre is coordinating a county wide project of recycling both the cut and living Christmas trees.

The trees will be chipped by tree chipping companies donating equipment and services. The trees will then be transported to the landfill tub-grinder, creating mulch that has economic and environmental benefits.

Mulching Christmas trees reduces the expense of extra trash pick ups and the cost to bury in increasingly scarce landfills. In addition to reducing litter and the cost of litter control, mulch covers the ground and gradually returns the tree's nutrients to the soil as a free fertilizer. Mulching slows soil erosion and water loss through evaporation, saving water as well as the energy resources and money that would otherwise be required to pump water.

Recycling trees will also reduce fire hazards and reminds people that recycling should be a year round habit for households and businesses.

The city of San Diego is a major sponsor of this program. The Christmas Tree Recycling Program is a magnificent example of how government, businesses, non-profit groups, and volunteers can work together.

The public is asked to remove all nails, wood, or metal bases, ornaments, wreaths, and boughs.

If you would like to help or would like additional information on this year's Christmas Tree Recycling program, please call Angelica at the San Diego Ecology Centre at (619) 238-1987. It is located at 2270 Fifth Avenue, San Diego, CA 92101.

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Some More Hoyas For Your Hanging Basket

By Christine M. Burton

There are an estimated 150 species of validly published hoya species and probably almost as many not yet published. Hoyas come in tiny miniatures with leaves not much bigger than balsam needles. There are hoyas with leaves as large and as round as dinner plates. Some have leaves that look like string beans. There are hoyas with two feet long leaves and hoyas with one centimeter short leaves. There are hoyas with leaves of all sizes and shapes between these extremes. Some hoyas have smooth, shiny leaves, others are hairy all over. Some are hairy on one surface and smooth on the other. There are hoyas with dull dark colours and some with bright colours. Those with dark veins are most beautiful, as are those with variegation and speckling. Most interesting are those with leaves which make attractive homes for ants (but not the species of ants we know). **H. Darwinii** has leaves of two types, "Leaf leaves and ant leaves, which are, in fact, regular leaves that grow in a spiral and appear as a round ball. As the leaf curls, it forms a number of hollow chambers, which in nature serve as water reservoirs, or sometimes as a hotel for ants. The ants, in turn, nourish the plant with waste products. Another hoya, **H. imbricata,** unlike most hoyas which have two opposite leaves per node, has only one leaf per node. These large, round leaves overlap, shingle fashion. As the vine climbs up a tree, the leaves cling to the tree bark, covering the vine and roots. These hoyas also serve as shelters for native ants. The flowers are beautiful but the plant is rather grotesque. It is very popular with people who like weird plants. I call it a "Debi plant", for my daughter who grows only plants that look like prehistoric monsters of the animal kingdom.

Just as the leaves are varied, so are the flowers. There are hoyas with white flowers, pink flowers, red flowers, purple flowers, brown flowers, and yellow flowers. Some have white petals and red crowns; others have red petals and white crowns. There are solid colors and two tones. How about a yellow with a rusty red border around the corolla, or a burgundy corolla with a white or cream border? They exist in hoyadom.

There are flowers only a few millimeters in diameter in clusters the diameter of a quarter. Other flowers are as large as 3½ inches in diameter with ten to fifteen in a cluster. Some hoyas only have one bloom to a cluster, others have several dozen blooms to a cluster. One that bloomed for me the first time this spring has 74 flowers in the umbel. Each flower was just under an inch in diameter.

Hoyas belong in "scent gardens" as most of them have heavenly scents, but here again, we find variety. A few hoyas, such as **H. globulosa** and **H. graveolens** are noted for their offensive scent. The scents are varied with some having the scent of jasmine, gardenia, honeysuckle, and heliotrope. Kitchen scents are also found. Some compare various **H. carnosa** cultivars with chocolate, which I have never noted. There are hoyas with scents compared to coconut, cantaloupe, Camay soap, Chanel #5 and just about any good smell you can imagine. In some the odor can become overpowering, particularly at night, as most are only night scented. A few, such as **H. lacunosa,** with its clean Camay soap scent, are day scented.

I try to keep my greenhouse near 60° at night in winter because I don't want my hoyas to go dormant, however 45° at night in winter does no harm to any I have grown. I kept it there for many years. I have found that freezing temperatures of a very short duration do not do permanent damage. There is at least one hoya native to a mountainous area of New Guinea, which is known to thrive in the freezing temperatures of its Alpine home. At the other extreme, I have never known it to get too hot for hoyas. Most hoyas come from the very hottest, most humid areas of the earth. I have never seen a hoya bloom in an air conditioned room. They have bloomed profusely in my greenhouse, which has been known to reach 120°F, even with a large fan going full time.

A loose, well draining soil that contains a good amount of coarse organic matter will suit just about any hoya. Bright light is also recommended, but not mandatory for most hoyas. I have had excellent growth and bloom in deep shade. I also recommend diluted applications of fertilizer, when young, a well balanced one, but as they mature, I use one lower in nitrogen. Watering is done when the top inch or two of soil becomes dry to touch. More important than any other single ingredient is humidity. Hoyas thrive in very high humidity.

I often say that if the humidity were higher in my greenhouse, it would be called rain. That makes the aerial rootlets on those species which

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have them, grow long, resembling those on Monstera and Philodendron. These aerial roots are often quite decorative too. Most are a whitish green and frequently have red tips.

Pests are few, the same as with most indoor plants, mealies and mites. They are treated as you would with any other plant, with chemicals, or with natural means, depending on your particular persuasion.

Recommended species and cultivars for beginners are: **H. carnosa, H. carnosa cv. Krinkle 8, H. incrassata, H. Motoskei, Hoya obovata, H. pubicalyx cv. Pink Silver,** and **H. shepherdii.**

If you are just starting out with hoyas, especially if you are also a beginning gardener, start small. When you have mastered a few easy ones, add some of the newer ones. I say newer, rather than harder, because there are so many hoyas available that weren't known to us a few years ago, that we really haven't had time to learn their needs. It is still a time of experimentation, even for the experienced growers among us, so we can't tell you how it "ought to be done" because we are still learning too. Because of the newness (to us) of so many species, the prices are also much higher, and one must seek out specialty mail order sources for many species. Better to wade into the "water" a step at a time.

The best way to build up a collection of hoyas is still to join a plant group where members can trade cuts with you, or to find similarly interested friends with whom to pool orders (to meet minimums). The Hoya Society International sponsors a round robin program which gives members the opportunity to exchange growing and cultural information with one another. These members also do a lot of trading of cuts and plantlets, which gives them the opportunity to grow some very rare things at very reasonable prices, namely postage.

Most hoyas are easy to grow. The two most encountered problems involve sources (few walk-in nurseries ever heard of them), and nomenclature (those that do feel "We have to call them something and a wrong name is better than no name"). The Hoya Society's main goal is to carry on research to discover the correct names of the hundred or more hoyas now being circulated with the wrong names. When we started nine years ago, there were dealers listing as many as 200 hoya names but who had, at most, 7 or 8 correctly identified hoyas. We were told that finding correct identities would be impossible because "all the descriptions and all the herbarium material was lost in WW-2", which proved to be wrong. It took only a few trips to a land grant college library to learn that some literature existed, and by asking a few questions, and writing a few letters, all the literature was located, and most of the herbarium material. What we learned is that wrong names are easy to come by, but it takes a little work to learn the truth.

In the past nine years, we have succeeded in correcting approximately 40 identity errors, including a half dozen in the last year. It is a slow tedious job, but progress is being made.

The Hoya Society International does not have a pamplet on hoya culture but we are working on one. Meantime, we will answer any questions about hoyas and our society, but only if you send a self addressed stamped envelope. (SASE). We are a non-profit organization, operating on a very limited budget, and just cannot afford to answer the hundreds of letters that come in each month, otherwise. We send membership info and an application form to all who write, but unless a self-addressed stamped envelope is enclosed, no letters containing questions are answered. HSI can't afford it, and I can't afford it. Send a separate SASE for a mail order dealer source list.

The author is the founder of The Hoya Society International and has been editor of its bulletin, The Hoyan, for the past 9 years. Christine M. Burton, P.O. Box 54271, Atlanta, GA 30308, USA.

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Drought Tolerant Plants Garden

By Laurie Roberts

In the interest of water conservation and perhaps the desire to reinstate a kind of regional integrity to our California gardens, landscape architects, horticulturalists and homeowners are experimenting with native plants. Not only are natives worthy of experimentation, but many are highly desirable for several reasons:

- **colorful flowers and foliage**
- **aromatic**
- **capable of naturalizing (surviving on rainfall alone)**
- **deep-rooted and prevent erosion**
- **tolerate native soils**
- **attract wildlife**
- **their textures, forms and colors reflect our region's uniqueness and thereby bridge the gap between our built and natural environments**

The following plants are just a few that adapt well to garden use and will make the transition of a water thirsty garden to one that conserves water a pleasurable adventure.

Aquilegia formosa - Red Columbine

A herbaceous to almost evergreen plant found in moist woods throughout much of California. It reseeds easily and has delicate, lacey foliage, and takes shade or sun if ample moisture is available. It is useful in partially shaded borders and has a flowering period which lasts longer than most other columbines. It is very attractive to hummingbirds.

Arctostaphylos - Manzanita

There are many species of manzanita and range in form from groundcovers to tall shrubs. The flowers are generally white or pink in winter through spring, followed by berries. Their red bark, their bright to soft green leaves, and their branching structure make this plant special. They are slow growers, are attractive to birds, and they do not like overhead watering.

Artemisia pycnocephala - Sandhill Sage

A low mounding silver grey shrub with striking leaf and texture. Good as a low hedge or accent. Excellent along coast and will take sun or shade. Fast growing but may be short-lived.

Baccharis pilularis - Dwarf Coyote Bush

Found in dunes and headlands along the coast. It is a mat forming evergreen perennial thriving in wet or dry situations, sun to part shade. It has a rich green leaf, is fast growing, and is excellent on banks for erosion control. It is fire retardant and deer proof, and needs yearly pruning to look its best.

Ceanothus - Wild Lilac

There are many types of ceanothus found in several plant communities. They range in size from low growing groundcovers to tree size shrubs. They are evergreen with blue or white flowers. They bloom in early spring and have many garden uses. They are good for erosion control and lovely as foundation planting.

Cercis occidentalis - Western Redbud

A deciduous, showy shrub or tree valued for its flowers, leaves, bark and airy structure. Slow to moderate growth and seems to do better inland. It's hardy and will take full sun or part shade.

Eriogonum giganteum - St. Catherine's Lace

A silver-gray leafed perennial whose flower heads are highly prized by florists. It is a native to San Clemente and Catalina Islands. It is summer flowering and needs full sun.

Fremontia - Flannel Bush

A spectacular yellow flowering perennial shrub with interesting wooly leaves. Grows 10 to 20 feet in full sun, and is spring flowering. It requires excellent drainage and can be espaliered.

Heuchera sanguinea Coral Bells or Island Alum Root

16 species in California found on coastal bluffs to peaks of high sierra in semi-shaded areas where occasional seepage may occur. Larger species may be used in back and middle ground of a perennial border, masses, and as groundcover. Good in pots and rock gardens. They like well drained soil, semi-shade inland, or full sun in cooler regions. Good under oaks or dry shade areas. Divide in fall or winter. These plants have a lovely, delicate coral or white flower which are excellent and long-lived in arrangements, or left on the plant to enjoy in the garden. Attractive to hummingbirds.

Iris douglasiana - Douglas Iris

A beardless iris which tolerates some shade and comes in many colors but most commonly blue. It is drought and water tolerant and usually evergreen. Blooming begins in February. Native to California coast from Santa Barbara to Oregon.

Lavatera assurgentiflora - Tree Mallow

A fast growing broadleaf shrub 12 to 18 feet high and about 10 feet wide. Excellent along coastal bluffs, resists salt spray, and controls erosion. It has spectacular magenta star shape flowers which bloom throughout most of the year.

Mahonia Golden Abundance

A beautiful dark green leafed shrub with holly-like leaves and bright yellow flowers. This shrub is tolerant of shade, drought and sun in coastal areas. Needs some summer water. Spring flowering, grows to 8 feet and higher with 5 foot spread. This is good to use on a north side of a building where some height is desired, but planting bed is narrow, such as in a side yard where shade is present.

Mimulus - Monkey Flower

Perennials and annuals. The native Monkey Flowers are found in several habitats ranging from arid slopes to moist meadows and along streams. **Mimulus gluttatus** loves water and makes a good pot plant,

and is almost ever blooming. The **Mimulus hybrids** (Diplacus X) are found in several colors and get about 2 feet tall. They do well in semi-dry borders and are free flowering over a long period of time from early to late summer.

Perityle incana - Guadalupe Island Rock Daisy

Silver foliage, yellow Dusty Miller type flower. A dependable perennial native to the islands off California. Will take full sun to part shade. The striking flower and foliage of this plant make it a beautiful accent in the garden.

Prunus Lyonii - Catalina Cheery

Glossy, dense, lush green leafed shrub or tree which can make a fast growing screen. Has abundant white flowers, followed by red berries which are very attractive to birds. This shrub can be pruned as a hedge, takes full sun, will naturalize but can also tolerate summer water. Do not plant near paving where berry drop will stain it.

Ribes viburnifolium - Catalina Perfume

A trailing ground cover found in shaded areas of canyons from the Santa Catalina Islands down into Baja. It takes morning sun to high shade. Tolerant of drought or moisture. It has a lush woodland effect in the garden, and is an excellent groundcover under oaks. Flowers insignificant.

Romneya coulteri - Matilija Poppy

Spectacular flowering shrub that needs to be cut back after flowering. Its large white flowers are beautiful in arrangements but one should be cautious about where to plant it since it is highly invasive. Good on slopes and wild areas of the garden. Native to dry washes and canyons.

Salvia clevelandii - Cleveland Sage

A woody perennial with grey-green leaves and blue-purple flower spikes. This plant is extemely desirable because of the wonderful aroma it sends out into the garden. Full sun, and prune out woody growth.

Laurie Roberts has a B.S. in Landscape Architecture from Cal Poly San Luis Obispo and worked for a local design firm before becoming a freelance garden designer specializing in native plant and drought tolerant gardens.

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HOW TO DEAL WITH

PET DAMAGE

ON YOUR LAWN

By Cynthia Drake

One of the most common spot causing problems on turf are the areas deposited on by family and neighborhood pets. Quite often the spots do not show for up to a week after the visitation. The problem then is to decide how to best patch the bare spot before weeds appear.

To try to prevent the animals from visiting your yard is the first, and the most distrating of chores. There are many commercially prepared products that can be purchased from local nurseries that attempt to ward off animals by the use of strong odors. Moth balls will work quite well if the chidlren and pets are not prone to ingesting small items. Some people report that the use of glass bottle filled with water and placed on the lawn will keep the animals from the yard. This, however, will also spot the turf and is quite dangerous near small children. There are reports that common blood meal fertilizer will help if spread along the property line. The smell startles animals into leaving.

The next step taken after the spot is found, and the droppings are removed is to hose the area down thoroughly. In the case of urine spots, the hosing will be most important. You can use a light application of lime to the soil or baking soda to neutralize the acid of the droppings or urine.

The key to a quick recovery of the turf will depend on the prompt and observant actions of the lawn owner.

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"What's Bugging You?"

By Barney Gonsalves

Last year, I had the opportunity and pleasure of visiting with the South Coast Branch at their October meeting. The drawing card was a program on "Insects and Diseases," presented by Dr. Jean Nater. I'd never met the lady, but have been a longtime fan of her writings and ideas. It was evident that others felt the same, as the meeting was well attended and Dr. Nater had everyone's attention. My only disappointment . . . we ran out of time, as this very busy lady has a demanding schedule.

On the way home, I felt that what I'd learned, plus what I already knew might just make for an article on the subject, perhaps helping some of the newer and less informed members.

What I am about to put down here is not, repeat not, a text of what Dr. Nater said, but rather an amalgam of things I've learned from both her and other sources.

I am not, by any means, an expert on anything, much less insects and chemicals. Some may not agree with what I have to say — those who do not are certainly welcome to challenge anything here. That is what **The Fuchsia Fan** is all about . . . to inform, to teach, and to share knowledge and ideas. If anyone has any of these, please share them with us who are always yearning for learning.

Identifying pests would be the first step in dealing with our problem since it would be ludicrous to treat for one type of pest when we actually have another which may have an entirely different treatment. Looking at the plant and/or damage would be helpful. Are the leaves chewed? Where on the plant is the damage? Can you see the culprit? And, is it localized or all over the garden? Dr. Nater mentioned an excellent book on identifying the enemy by the name of 'Rodale's Color Handbook of Garden Insects.' (It should be in every branch library.) Rodale, by the way, is the same firm that publishes 'Organic Gardening' and has always been at the forefront of the nontoxic pesticides and health nutrition fields. If you still can't identify the insect, take it, in an enclosed bottle or plastic bag, to the local nursery. They usually have one or two employees who are well versed on the subject and have the equipment to help. Further help is available at the Calif. Dept. of Agriculture. They always have an office in each county. Although a state operated entity, they normally are implemented by the County Agricultural Office. Usually they will not only identify the pest but will recommend its treatment, again take a sample. Another way of identification would be to take the enclosed enemy to a branch meeting; usually someone will have enough knowledge to identify the pest. Also, helpful at home along with the aforementioned book is some type of magnifying glass; looking at a few plants every now and then would help to identify a small infestation before an inundation of the same. Lens or eye loupes come in various powers; getting one too small won't help much! For instance, in order to see spider mites you will need at least a 10x lens. Aphids can be seen with the naked eye, as well as worms. Fuchsia mite requires something more in the 20 power range. To use a lens we must place it next to the eye and bring the subject up to it for best results. (Thank you, Jean, for that good hint.) An eye loupe, though somewhat awkward at first, is probably best as it leaves both hands free. Tools of this nature can sometimes be hard to find. Try book stores at the local college or university, photo stores, stamp and coin collecting shops.

Types of insects come in mainly three groups depending on how they go about doing their damage.

Suckers are probably the largest group. Some of these are: aphids, whitefly (and especially their larvae), mealy bugs, spider mites, and our newest enemy, fuchsia mite. (I have also read that the fuchsia mite does its damage not by what it takes out of the plant, but more so, by what it injects into it.)

Chewers are another type that attract fuchsias. Most of these can be easily spotted by the chewed leaves and large holes on the surface. Most worms and loopers have the ability to change color or camouflage themselves to match the plant or stem color. For myself, by inspecting closely, I nearly always find them, during the day, hiding along a stem in the exact same color . . . be it red, white, or green. Normally, I don't bother with worms; they usually appear after

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the shows are over, eat a few leaves here and there, and then quickly fly away as butterflies. In my experience, the little moths that usually fly around in the late afternoon or evening are the ones to watch, as they are laying eggs everywhere they land.

Another type of insect we sometimes see, but not nearly as often, is the **Rasper.** Most notable of these are the thrips, which usually come in two types, those that attack leaves and those that prefer blooms. Of the two, the leaf loving type are the easier to control as they are most susceptible to sprays and such; those living in blooms are harder to reach.

In the majority of cases the insects mentioned above are the most serious pests of fuchsias, along with the fact that we also have **fungus diseases** that also affect our plants. Most notable of these are **rust, botrytis, root rot, sooty mold** and very rarely, **mildew.** Remember that a fungal disease is not an insect!

Last on the list of insects are those usually most overlooked by many of us — namely, those living in the mix, such as beetle grubs and nematodes. Normally these are not a problem if we use a sterile mix. However, if you purchase a plant someplace else, the grower may have used a product in his mix that could harbor these pests. Garden dirt and steer manure are some that come to mind.

Now that we hopefully have identified our problem, it's time to talk about how we could have prevented it in the first place. Well, we can't! Insects and diseases were here long before us and they will still be here long after man no longer exists. What we must do is learn to cope with the problem and learn to co-exist. Have you ever been anywhere in the wild (the exception being grasshoppers) where all plants were infested with all of the above? I doubt it very much; nature in her infinite wisdom has an exact balance that keeps everything under control. It's only when man enters the picture that things get out of hand and species of both fauna and flora begin to disappear. In the last hundred years we, in an attempt to outwit nature, have been losing the battle to the point where insects are now stronger and more numerous than ever before. Formulas and new chemicals have to be changed constantly as the enemy builds up a resistance to everything we try and new generations are immune to what once was good control.

Ten years ago I had many fuchsias, very seldom did any type of spraying, and had no whiteflies or spider mites. I brought some tomato plants into the yard . . . they were infested with whitefly larva and even now, the best I can do is keep them under control!

Organic gardeners throughout the ages have relied mainly on nature's balance to do its thing, and let natural predators take care of the bad guys. Many go so far as to supply their favorite

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menu in hopes they will leave alone the main crop. Some interplant with flowers that have the ability to repel pests.

A healthy plant — one well-grown, watered, and fertilized is much better equipped to cope with insect attacks than one that is spindly, poorly fed, ignored, and generally run down. As Dr. Nater put it quite well, "You may as well put out a 'free lunch' sign, because insects always attack these first."

Fuchsias should always be given plenty of room so they do not touch and offer a "toll-free bridge" from one plant to another.

Air circulation around plants is a must as an aid to preventing spread of not only insects, but also, more important, the spreading of the fungal diseases. Here again, infection can occur long before evidence of the same appears.

Keeping pots clean of dead leaves and blooms, as well as the ground around upright plants will aid greatly to stop the spread of many insects and diseases. I believe in keeping these dead leaves and blooms out of any compost pile, as I feel that the pile doesn't get hot enough to kill all of these organisms.

All new plant purchases should never be brought into the main garden without first being isolated for a week or so to check for pests. Most will hatch within that time and you can then cure your problem in that small area before infecting the whole garden. You must be sure to take the plant out of the pots to check for nematodes, grubs and the like also. Use your magnifier to check, especially under the leaves. I've seen many fuchsias at various branch plant tables and shows that are badly covered with spider mites, whitefly larvae, and even fuchsia mite. These should never have been bought in to begin with, but if they are, bring your magnifier lens and look them over, especially under the leaves once again.

All the preceeding paragraphs dealt with prevention of fuchsia problems, however as careful as you may be, they may still find their way into the garden. A heavy infestation of any problems may be aided (especially in summer) by cutting back the plants by a third, and as hard as it may hurt, remove all blooms. The bees, hummingbirds, etc., can spread the problem quickly; without the blooms, these carriers and spreaders are much less prone to visit a sick plant.

Debugging your garden can be accomplished in approximately (7) seven stages. Beginning with the aforementioned (1) prevention and in order of toxicity, (2) water, (3) hand picking, (4) plant choice, (5) insecticidal soap, (6) parasites and biological controls, and (7) chemicals.

(2) Water can indeed be used as an eradicant on pests, especially aphids, and to a lesser degree, spider mites. A strong stream of water will knock most of the pets off the plant where they will soon succumb. If you have aphids, you most probably have ants. Ants are an aphid's best friend as they actually carry the critters to feeding spots. As the aphid does its damage, it secretes honeydew which, to ants, is like an ice cream cone. Not only will the ants supply all the legwork, but will also attack many natural enemies of the aphids. Hose off the aphids, get rid of the ants, and your plants will thank you.

(3) Hand picking of certain insects is easily accomplished because they are easily seen. Aphids, all kinds of worms, and grubs can be removed without resorting to toxic chemicals.

(4) Plant choice — you may have noticed that a number of fuchsias have an affinity for drawing different insects: some are especially tasty to spider mites, whitefly, or fuchsia mite. If you have some of these and nothing seems to help, why keep them around to the point of frustration?

(5) Insecticidal soaps are available now that do a fairly good job of keeping plants relatively free of insects. They are non-toxic, and the secret here is to use them often, (3-5 days apart) to do the job. Insecticidal soap is a pure soap derived from natural fatty substances found in plants and animals. These fatty acids mostly act by adversely affecting the pests' chemistry or disrupting their growth and development. Many of the newer insecticidal soap products (you will see them in 1987) will contain additives such as sulfur to aid in controlling mites more readily, while also acting as a fungicide. These products are all considered as non-toxic and may be used until day of harvest — if used on vegetables. Other products included in this soap product will contain pyrethrins (a naturally-occurring extract of the chrysanthemum family). This kind of product works on the central nervous system of pests like beatles & their grubs. Dr. Nater informed us that we can make a fairly good soap product by using 2 tablespoons of Ivory liquid soap in a gallon of water. (The type used to wash dishes by hand.) **Remember soap,** not detergent!

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(6) Parasites and biological controls are the use of natural predators and dead viruses to attack certain pests and/or selective insects. There are many laboratories now providing these materials. The products can now be found in many local nurseries. 'Attack' is one brand name that comes to mind. I've never used them so I can't comment on their effectiveness. Predators are available from many mail order sources; the problem with these is that once released in the garden, there is nothing to prevent them from going to the neighbors. I understand it's best to release predators toward late evening, as they will have more of an inclination to remain rather than travel in the dark.

This brings us to our last defense against the enemy -- chemicals. Petrochemicals have been around for many, many years. They are constantly being changed and added to. Many are considered safe to use as per directions. However, over the years, I've found that what is considered safe today, usually sometime in the future is often taken off the market as, indeed, not as safe as originally believed.

By law, pesticides are divided into three categories: highly toxic, moderately toxic, and slightly toxic. Highly toxic chemicals are often marked with a skull and crossbones plus the words, DANGER POISON. Pesticides in the moderate range (like diazinon) are labeled with a "WARNING." The slightly toxic products (Malathion) only carry a CAUTION warning. Therefore, it would be prudent to start at the least toxic products and work backward to the more potent. A word to the wise here about 'Systemic' pesticides: while most are very effective, I believe they are also the most dangerous of the group for a number of reasons. They normally keep their effectiveness for a long time and it's quite easy to forget that this poison is still active when you put your hands in the mix three weeks later. You water, and some of the product is dripping out of the pot, possibly onto your body. The most scary to me is, if you are growing fruit trees or food crops in one part of the yard, and the systemic you are spraying not only drifts off to that area, but also drips to the ground, where possibly, many feeder roots from the fruit trees may very well reach.

Assuming you've decided to spray with a pesticide, and we've identified the pest in question, we now have to decide how to go about this task. Whitefly, spider mites especially, are doing all their damage on the underside of the leaves, so that must be the point of attack. Leaves are naturally water repellent, forming drops of water where it hits the surface. A spreader-sticker product, soap once again helps as a surficant to make the water wetter and spread over the surface rather than make droplets. Coverage of leaf surface is better, and so kill is improved. I, myself, always use a small amount of volk oil to aid as a sticker and get the extra benefit of its own effectiveness, particularly on spider mites. I have also used volk oil as a dormant spray with no ill effects, since the leaves are gone anyway.

Remember to always read the directions, and follow them to the letter, including protective clothing & equipment. On many products you may find a variety of directions, and it can be confusing. For instance, it may state 1 teaspoon on roses for whitefly, but 2 teaspooons for fuchsias per gallon of water. Logic states that if 1 teaspoon will kill them, why use 2 if a whitefly is a whitefly? I've since given up trying to second guess scientists that know a lot more than I do. Maybe someone, out there, reading this can enlighten us — till that time, again, read and follow directions.

Toward evening, is, for me, an excellent time to spray, as most of the beneficial insects, birds, etc. are no longer as active., the pesticide doesn't dry too fast, and at least here,there is a very little wind after 4 p.m.

Most products the majority of us use are the uncontrolled substances we find at any garden shop. Each of us has his or her own favorite and use it all the time. As I stated earlier, this is a mistake for the reason I stated: insects have the ability to develop a tolerance for a particular product, and very soon become immune with following generations. A better way would be to vary products from week to week or even month to month to eliminate that problem.

There are many insecticides that do a wonderful job on the enemy; most are controlled substances available only to licensed pesticide applicators and not available to the average fuchsia enthusiast. Anyone can become a licensed applicator by attending Cal State-run classes and taking the test for same. There are different grades of permits issues, depending what the grower or applicator actually needs.

Also, out there are many pesticides not particularly controlled, but still not available to the general public; most are excellent products, but are on the expensive side, and not usually sold in general nurseries. Many can be found in rural farm areas and grower supply centers.

When mixing pesticides to be sprayed, always fill the tank or jar with 3/4 of the water, then add the insecticide followed by the remainder of the water. This will prevent splashing the undiluted product up into your face or eyes.

Cynthia R. Drake

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As many of you know, in Southern California our water is highly alkaline, reaching as high as 8.5 on the pH scale in some areas. There are many members out there that believe adding an insecticide product to this type of water greatly reduces its effectiveness. In correspondence I've had with a number of chemical supply companies, I can agree with that belief.

In attempting to determine if any of these companies are conducting tests on controlling fuchsia mites, only two were kind enough to answer my request. One merely sent me flyers on all the products they sell, but no real information. I was able to get from one a complete scientific analysis of two of their products. These were 'Pentac' and 'Mavrik.' Literature I read does, indeed, state that their product not only loses some of its effectiveness, but also longevity in high alkaline water. It's suggested the water be acidified. This can be accomplished by adding an acid type product such as vinegar; ask at the local nursery for manufactured products to do this.

While talking about chemical companies and products, this would be a good time to mention something I've noticed about two familiar products by Ortho Chemicals. If you've read the newer labels on 'Orthenex' and 'Isotox,' you will see that they claim both products will control Fuchsia Mite. If anyone out there has used these with success, please let us know.

Many times we will read of a new product we're anxious to try. For instance, Chuck Hassett, Editor of the AFS, wrote earlier of a new product marketed as 'Talstar;' he gave it a high recommendation. When Chuck says something is good, it's good. I looked and searched all over San Diego County and not only didn't find it but could not locate anyone who ever heard of it. Many brands of products are available in one area and not another. Talstar may very well be one of those not available to the average grower, but not a controlled substance. Plantvax, also, though excellent for rust, only comes in large expensive packages. It is unlawful for someone to buy these larger, more expensive packages, break them down to smaller lots and sell them to others at branch meetings. Ditto with 'Pentac' which is recommended for spider mites.

Once again, for the average home grower, the local nursery is the only source for insecticides. The most beautiful fuchsia garden I've visited used Orthenix every 7-10 days with excellent results. Lately I've gone to using 'Mavrik.' So far, I'm very pleased with it. It's expensive, but goes a long way, has no smell, is safe once it dries, doesn't ruin the blooms, and it carries a CAUTION label, has a broad spectrum (controls many kinds of pests). It also is a non-restricted material (no license required), can be used as a dip for cuttings and is relatively safe around birds. It, also, on the negative side, is toxic to fish. Unfortunately you won't find it at the neighborhood nursery (probably because of cost) although I have seen it for sale at a few branch meetings.

Whatever you use to keep your fuchsias clean and healthy, one thing is certain . . . spraying must be done on systematic and regular intervals! Spraying once a month won't do it. Most successful gardeners I've spoken to do so every 7-10 days. With heavy infestations it may be necessary to spray much oftener until the pest cycle of growth and reproduction is broken. Only then can we go to a longer time interval for maintenance.

If possible, try to learn the good guys from the bad guys. The Rodale book mentioned earlier will help. Most folks know that lady bugs eat aphids but don't recognize the many beneficial insects that help keep our yards clean. There are good mites, good flies, good wasps, and many other insects that should be encouraged, not destroyed.

On occasion you may spray faithfully, especially for spider mites and yet the population seems to increase and the problem gets worse. It just may be you've been using the same product for a long time. The newer generation of mites has built up a resistance to that product. The predators and parasites that helped keep the mites down are still being killed every time you spray; meanwhile the spider mites are living it up! This, by the way, is the reason you may have heard -- "When using 'Sevin' to help control the fuchsia mite, it's a good idea to follow up with Kelthane." The Sevin is also destroying beneficial predators of spider mite, the spider mite multiplies rapidly, and before you know it, you've got fuchsia mite and spider mite problems. Kelthane, being a mitecide, aids in controlling a spider mite resurgence.

Remember this, it's a big world . . . we, insects, and everything else have a purpose. Without one the other can't exist. My thanks to Dr. Jean Nater for giving me the help, also to Ida Drapin for the invitation to visit her garden.

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Plants for Security

By San Diego Chapter California Association of Nurserymen

There are no plants that will actually catch a burglar or replace proper security inside your house. The plants on this list will, through thorns or prickly foliage, restrict access to the yard or the home. These plants should be available in most nurseries. If not, the nurseryman can order them for you.

BOTANICAL NAME	COMMON NAME					COMMENTS
Berberis darwinii	Darwin barbary	T	6 – 4	S	Orange/blue	evergreen, hardy
B. tricanthophora	Threespine barbary	T	5 – 3	S	Cream/blue	good barrier/hedge
B. atropurpurea	Red Jap. barbary	T	5 – 4	S	white/blue	deciduous
B. atro. nana	Dwf. Jap. barbary	T	3 – 3	S	– –	deciduous
Bougainvillea	Bougainvillea	T	10–10	S	red/purple/	damaged by frost
Grevillea noellii	Dwf gravillea	pf	3 – 6	S	red/ –	fast spreading
Chaenomeles	Quince	T	6 – 5	S	red/yellow	use fruit for jelly
Cortaderia argentea	Pampas grass	pf	6 – 6	S	white/ –	fast growth
Citrus dwf. lemon	Lisbon, Eureka	T	8 – 5	S	white/yellow	fragrant flowers
Citrus dwf. lime	Bearss	T	6 – 5	S	white/green	fragrant flowers
Ilex' San Gabriel	Hybrid holly	pf	5 – 5	S/sh	white/red	cut for decorations
Juniper C. robusta	Upright juniper	pf	12–6	S	– –	hedge or screen
Mahonia lomarifolia	Chinese hollygrape	pf	6 – 3	sh	yellow-blue	use in narrow areas
Mahonia pinnata	Calif. holly grape	pf	5 – 4	S/sh	gold/blue	drought tolerant
Parkinsonia aculeata	Mex. palo verde	T	20-15	S	yellow/ –	hardy, tall barrier
Pyracantha graberi	Firethorn	T	15-10	S	white/red	good espalier, hedge
P. "Red Elf"	Dwf. firethorn	T	5 – 5	S	white/red	compact growth
P. "Santa Cruz"	Prostrate firethorn	T	4 – 10	S	white/red	cover for slopes
Puncia "Wonderful"	Pomegranate	T	10–6	S	orange/red	edible fruit
P. granatum nana	Dwf. pomegranate	T	4 – 4	S	orange/ –	non-fruiting
Roses – bush	Many varieties	T	6 – 4	S	many/ –	good cut flowers
Roses – climbing	Many varieties	T	12–6	S	many/ –	fence protection
Ribes	Gooseberry	T	5 – 3	S/sh	white/green	edible fruit
Yucca aloifolia	Spanish bayonet	pf	6 – 4	S	white/ –	drought tolerant
Xylosma compacta	Dwf. Xylosma	T	5 – 4	S/sh	– –	glossy foliage

NAME	Botanical names are given for positive identification of the specific varieties.
DEFENSE	Plants with thorns are indicated by "T", "pf" indicates plants with prickly foliage.
SIZE	The numbers indicate the height and spread of the plants after 5 to 7 years growth.
LOCATION	Indicates if the plant should be grown in the sun (S), shade (sh) or in half and half situations (S/sh).
FLOWERS	Colors listed are for the flowers/berries, if there are any.

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Cyclamen

By Tineke Wilders

The **Persian Violet,** as the **Cyclamen persicum** is also called, belongs to the Primula family and produces elegantly shaped flowers in various colours of red, mauve, burgundy, white, and pastel shades in between. It grows its upright, heart-shaped leaves and its dainty flowers from a bulbous base, which is called a "corm." Recently, dwarf hybrids have been introduced with much smaller leaves and flowers. There is even a dwarf variety with small, fragrant white flowers.

Unfortunately, this plant is also the most misunderstand and hence, the most disappointing of seasonal plants.

The challenge to grow Cyclamen is to supply it with the basic elements it needs to survive indoors for as long as possible: rather cool temperatures, preferably between 12°-16° C. Too much heat causes leaves to drop and flowers to wilt. Through constant breeding, however, the growers have now introduced sturdier varieties, which are better able to withstand the unfriendly indoor environment.

So, don't give up yet if you were unsuccessful earlier with this plant. Give the Cyclamen another well-deserved chance.

Once you bring a Cyclamen home, allow it to go gradually through the adjustment. Then look for a cool window sill, where there is no direct sunlight.

Water should always be lukewarm and preferably given from the bottom, or, even better, by plunging the pot in water until the soil surface is moistened well. This is to prevent the corm from becoming soaking wet, which could cause it to rot. However, do not let the soil dry out. I personally prefer the immersing method, even when it means carrying the plant back and forth to the kitchen sink, but believe me, it's worth all this extra effort. The plant will reward you in return.

While the plant is in bloom, it needs weekly doses of plant food, 15-30-15 or 10-15-10, and you can simply add that to the water when you plunge the pot.

Always remove the dead flowers and yellow leaves. Use your thumb and index finger and give a slight twist: the stem will come off easily near bulb level.

Illustration by Michael Snitslaar

It is often difficult to keep the corm over, after it ceases to flower — but why not give it a try? When leaves start to turn yellow and the plant is no longer blooming, gradually withhold water, and the corm will go dormant. Store the pot in a cool and dark place until late May, then pot it up again in fresh potting soil, and try to coax it into bloom for next year's Christmas.

Tineke Wilders is a freelance garden writer/broadcaster/consultant, living and gardening in San Diego.

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Reviewed by Mary Lou Orphey

THE OLD-FASHIONED GARDEN, written by Nancy Lynch and illustrated by Gill Tomblin. 1987. Published in the U.S. by Rizzoli International Publications, Inc., 597 Fifth Avenue, New York, NY 10017. 8¼x12 in. 10 pages. Hardcover.

Four pop-up plans: Springtime in an Urban Garden, A Traditional Early-Summer Perennial Border, Midsummer in an Old-Fashioned Cottage Garden, and The Autumn Garden, attempt to give one a dimensional approach to garden planning. The plots are detailed and diagrammed. There is a list of easy to grow perennials, plants that work well together, helpful hints, and planting depths for hardy bulbs

THE SPECIALIST ORCHID GROWER, by J.N. Rentoul. 1987. Published in North America by Timber Press, 9999 S.W. Wilshire, Portland, Oregon. 7½x10 in. 201 pages. Paperback. $20.95 + $3.00 shipping and handling. Hardcover $35.95 + $3.00 shipping and handling. $2.00 for each additional book.

Interested in developing an orchid collection in an organized manner? Or are you simply captivated by their exquisite beauty and want to enjoy a few? Either way, this informative book will answer your questions on growing orchids successfully.

Many books have been written on growing orchids, but few are written specifically on creating a quality collection. Find out how many orchids are needed for a quality collection, how to choose them and how to grow them.

Learn about Cymbidiums, Cattleyas, Paphiopedilums and Odontoglossums. Other information in this colorful book includes orchids and climates, planning a species collection, growing methods, use of fertilizers and orchid root systems.

THE GENUS PAPHIOPEDILUM, by Phillip Cribb. Published in 1987 by Collingridge Books in association with The Royal Botanic Gardens, Kew. First published in the U.S. by Timber Press, 9999 S.W. Wilshire, Portland, Oregon 97225. 6¼x10 in. Hardcover. $39.95 + $3.00 shipping for first book; $2.00 each additional book. 212 pages.

Slipper orchids are a favorite of many orchid enthusiasts. "This account of the popular orchid genus Paphiopedilum is a complete taxonomic revision of the 60 accepted species (including 14 varieties), 58 of which are illustrated with 56 water-colour plates many of which have been painted especially for this book. Seventy-one line drawings and 15 distribution maps are included."

Also included is information on the morphology, anatomy and ecology of the genus in addition to hybridization, cultivation, and conservation of endangered species.

Anyone interested in Slipper Orchids will benefit from reading this textbook.

Llewellyn's 1988 MOON SIGN BOOK & Gardening Guide. Edited by Terry Buske, 1987. Lewellyn Publications, P.O. Box 64383-400, St. Paul, MN 55164-0383. 4x8 in. paperback $3.95. 412 pages.

Moon gardening — nature's timetable to bigger and better yields — do you believe it?

For those who have not considered the moon's influence on tides and other aspects of nature, this paperback may be of interest.

Timetables for planting in 1988 are included along with advice on raising vegetables, fruits and flowers.

There are weather predictions (a wet winter for the West), earthquake predictions (I think I will run away) and stock market forecasts (!!!). Personal horoscopes, health and beauty, leisure and recreation guides are included.

It is hard to ignore nature's influence on all our lives, but we must decide for ourselves how much we wish to let it govern us.

GARDENS OF THE ITALIAN VILLAS, by Marella Agnelli in association with Luca Pietromarchi, Robert Emmett Bright, Federico Forquet. Rizzoli International Publications, Inc., 597 Fifth Avenue, New York, NY 10017. 9¼x12 in. Hardcover. $50.00. 224 pages.

This beautiful book is the story of some natural treasures of Italy. Private gardens, many of which are centuries old, have been captured in vibrant photographs. The fascinating text describes their history and botanical background. Many anecdotes about historical figures are included.

Thirty-six significant gardens capture the beauty of Italy. The gardens are divided by theme: Reflections of an Ideal World; Art, Artifice and Nature; Drama and Delight; Geometry and Grace; The Romantic Spirit; and Modern Inspirations.

Read about the gardens of Frescot, San Liberato and Villa Medici. Look at Villa Rufalo, set on the rocky coast of Amalfi where Wagner was inspired to create the garden of Klingsor in the second act of **Parsifal.** See Villa Melzi D'Eril where Franz Lizst composed "Sonata to Dante". Enjoy a rare opportunity for a chairside tour of Italy's most beautiful private gardens.

CONIFERS by Keith Rushforth, 1987. Published in the U.S. by Facts On File, Inc. 460 Park Avenue South, New York, N.Y. 10016. 7¼x10 in. 219 pages. Hardcover. $24.95 in the U.S. $33.95 in Canada.

Conifers provide a dramatic background in a garden, especially in cold climates. The Gazetteer of Conifers, which lists conifers by the botanical or Latin name of the genus, is a good source for determining which conifers are appropriate for particular garden settings.

One learns about the biology of conifers, their use in the garden, propagation, planting and replanting, pests and diseases.

CONIFERS is concise, descriptive and an excellent reference text.

ARRANGING EVERLASTING FLOWERS compiled by Mary Newnes. 1987. Published in the U.S. by Henry Holt and Company, Inc. 521 Fifth Avenue, New York, N.Y. 10175. 8x11½ in. 123 pages. Hardcover. $17.95.

This step-by-step guide to creating dried flower arrangements is packed with colorful ideas for adding that special touch to one's home. In addition to everlasting arrangements, there are ones using both fresh and everlasting flowers and arrangements for Thanksgiving and Christmas.

Details on the size of arrangement containers, equipment, foliage, flowers, grass, seedheads and accessories are given for more than forty arrangements, along with directions for putting them together.

The arrangements were created by members of The National Association of Flower Arrangement Societies of Great Britain. The book would be a delightful gift for oneself or a friend.

Reviewed by Marian Lemen Sandy

HERBS, by E. Michaelob Korff. 1978. Order from E. Michaelob Korff, 3776 Alabama St., #215C, San Diego, CA 92104. 5½x8½". papercover. $11.00. 127 pages.

This publication certainly is not another one of those slick or pretty, look-at-it-once book on herbs! Rather, here is a sturdy, handy and accurate guide for everyone who has an interest in adding to his herbal knowledge.

Each page is devoted to a single herb; and, along with a line drawing of the plant (ranging from the easily-recognizable Aloe to the perhaps more exotic "Orach" or "Partridge Berry"), the reader will find interesting information to which this particular herb has been put — whether that be despepsia or an ointment for application to aching muscles! This is not to say, however, that any plant should ever be used for self treatment for any disorder. Only your doctor knows for sure!

Here the author presents information on uses going back hundreds and hundreds of years; and it is pointed out that man, from the beginning, has looked for nourishment and healing in growing things.

Also of interest is the statement that this book is the result of personal observation, old diaries, and other printed sources, both old and new.

So, to put a little more fun in your herbal life, check this one out! The forward concludes with, "If nothing else, may this book help stimulate someone's interest in the surrounding nature man depends upon and lives in symbiosis with."

Sea World Names New Director Of Horticulture

By Jackie Hill

Susan Locke has been promoted to Director of Horticulture at Sea World of California. Locke will supervise the park's staff of 53 gardeners, and is responsible for landscape design and construction, as well as maintenance of the park's 5,000 varieties of plants.

Locke came to Sea World in 1980 as lead gardener. In March, 1982, she was promoted to Assistant Horticulturist, and in October of that year to Horticulturist.

A graduate of San Diego State University, Locke serves as a member of the advisory committee for the nursery/landscape technology department of the San Diego Community College. In 1985, Locke received an Honor Award from the

Professional Grounds Management Society "in recognition of her outstanding individual professional accomplishments and excellence in grounds maintenance." She is a member of the American Association of Botanical Gardens and Arboreta, and the American Horticulture Society.

California GARDEN Since 1909

NOW IS THE TIME...

A CULTURAL CALENDAR OF CARE FROM OUR AFFILIATES

Compiled by Penny Bunker

BEGONIAS Margaret Lee

watch the watering program — slow growth requires less water, but do not allow to dry out.
practice clean housekeeping — clear away old foliage and leaves.
start cutting back canes and shrub type.
add more planter mix to pots as needed to keep roots covered.
spray for mildew and check for pests.
start tuberous begonias in February for bloom later

BONSAI Dr. Herbert Markowitz

reduce watering during rainy season; they need less water during this slower growth period, but do not allow to dry out.
refrain from fertilizing your trees.
use a lime-sulphur spray on deciduous trees.
graft evergreen trees as well as conifers.
watch for aphids and other sucking insects; spray accordingly.
prune fruit-bearing bonsai.
check deciduous trees carefully. If they start to sprout in February, move them to shade area to prevent blooming too early.

BROMELIADS Mary Siemers

keep plants from getting hail damage. Give them overhead protection such as shadecloth, or other suitable material.
protect plants from freezing temperature by keeping them at least two feet above the ground, and cover them with newspaper, sheets, etc., or bring them indoors.
be careful with plants in the house. Do not place them in front of a heating vent, or in a drafty area.
remember to empty the water from outdoor plants when it has rained consistently for several hours, — the weight of too much water can cause their leaves to spread apart and affect their compact form.
cut down on frequency of watering during cooler weather.
water only when center cup and/or soil is almost dry. Collecting rain water for future use on your plants is highly recommended.
do not fertilize until weather begins to warm up.

CACTI & SUCCULENTS Joey Betzler

remember to rest those winter dormant plants and keep those winter growers happy. Be careful with water and fertilizer. As it gets cold, water in early part of a sunny day; if it looks like rain, hold off on water. This allows water to evaporate and fungi does not start as easily.
protect outside plants from excessive rain if possible. If it is to frost, a piece of paper or plastic can save a plant from turning into a mass of soggy pulp (do not forget to remove the cover when conditions become more favorable).
water new cuttings; they may not root as fast. If you can supply bottom heat, you should not have much of a problem.
watch seedlings — fungi can be a problem at this time.
use snail and slug control.
clean old pots and pick up leaves and other debris.
watch for rodents and control — they can ruin your collection.
note those plants you might desire to propagate next growing season, and find out how to make the new starts.

CAMELLIAS E.C. Snooks

keep plants clean and pick up all blooms to prevent petal blight.
feed with a 2-10-10 fertilizer to get better and larger blooms.
select new varieties while they are in bloom.
treat a few buds with gibberallic acid for larger blooms.
continue a regular watering schedule; plants must be kept moist at all times but NOT wet.
make grafts.
transplant camellias; do not fertilize newly transplanted plants.

DAHLIAS Abe Janzen

cut off tops just above the soil level, and dig any tubers left in the ground. (By early January, the tops should be completely withered.)
store tubers without dividing them; leave on any soil that clings. Store in vermiculite or sand and keep in a cool place.
inspect those tubers stored earlier for signs of shriveling; if too dry, add a little moisture.

start in February to prepare the planting bed. Turn the soil, add humus, and fumigate. Two or three weeks prior to planting, thoroughly dig in humus and equal parts of superphosphate and sulphate of potash and turn well.
start in February some selected roots to sprout; these may make good cuttings. Bottom heat can be applied to encourage sprouting.

EPIPHYLLUMS (Orchid Cactus) Frank Granatowski
protect plants from unexpected frost and strong wintry winds.
bait for snail and slugs.
maintain preventative pest control by keeping plants free of debris and extraneous materials.
spray with insecticides only if necessary. Avoid sprays with oil base.
prune out dead and unsightly growth, allowing more energy to be used by newer and healthier branches.
feed mature plants with a 0-10-10 fertilizer to promote blooming in spring. Either liquid or slow release granules can be used; another application may be necessary in about 30 days.

FERNS Ray Sodomka
water gently; don't soak during any hot days. Don't rely on rains either.
check any hidden or covered plants to see that they get water.
keep after snails and slugs, pill bugs, etc.; winter days do not stop them.
trim off fronds in frost free areas.
fertilize platyceriums (staghorns) — give bone meal, hoof and horn, or a high nitrogen liquid.
plant spores.
take "pups" from platyceriums.

FUCHSIAS William Selby
protect plants from frost in cold areas.
check containers (pots, baskets, etc.) often for moisture; don't allow to dry out, but not WET.
fertilize those plants cut back 60-90 days before; new growth needs food.
pot up those cuttings taken when pruning was done; do not fertilize them for at least two weeks.
keep all plants clean of fallen leaves, blossoms, or other trash.
use insecticides or fungicides if you have a problem.

GERANIUMS Carol Roller
water only when plants become fairly dry. Each watering should moisten the entire soil ball. Excess water should drain away. Keep foliage as dry as possible.
continue feeding a balanced fertilizer dissolved in water, using at less than the recommended strength, often enough to keep plants from developing nutritional deficiencies.
prune any plants which have not been cut back. At least one green leaf should remain on each stem which has been cut. Lanky plants which were pruned in the fall, can be pruned again to produce compact plants. Tip pinch the other plants which were pruned in the fall.
make cuttings from the pruning. Shelter the cuttings from extreme weather.
protect all plants against freezing if temperatures go that low.
continue pest and disease control using products according to manufacturer's directions.
rotate plants on a regular basis in order to produce well-shaped plants.

GESNERIADS Michael Ludwig
do not water on a cold or cloudy day, or late in the afternoon.
check the underside of leaves and crown of plants. If necessary, spray for pests and disease, as plants are somewhat dormant and less subject to damage.
prepare pots for spring planting season. Wash with hot water and let them stand overnight in chlorox solution to kill unwanted pests. Wash thoroughly after soaking and air-dry.
start achimenes rhizomes now. Place them on damp bed of vermiculite in a shoe box; watch the growth for mold. There should be signs of new growth in 15 days if the temperature is warm enough. Plant them in a loose mix, barely cover, water thoroughly, and wait for the sprouts to show through the soil.

IRIS San Diego-Imperial Counties Iris Society
make last plantings of the bulbous iris for spring bloom.
continue a watering program, especially if rains are light.
start a regular spray program with copper oil to help control rust.
start in February to feed all iris with 0-10-10 liquid fertilizer; follow directions carefully and do not over fertilize.
establish a regular program of snail, slug, and aphids control.

ORCHIDS Chralie Fouquette
check moisture in pots of outdoor growing orchids; don't be fooled by overcast days — the plants will still dry out.
do last repotting of phalaenopsis before spring — some of the plants will be in spike, so be careful.

remember, if you use fir bark as a potting medium, use a heavy nitrogen fertilizer, because fir bark uses nitrogen as it breaks down.

give mobile dendrobiums some cool time and mist — don't wet or water until after buds are formed and possibly new growth started. Don't allow to dry out.

stake spikes of cymbidiums; don't rotate plant. Put the green and yellow ones in a little more shade to retard fading.

watch for sudden temperature drop and check in hot house for loose fittings, loose wires, clogged vents, etc.

dry out the unusual New World orchids. Sometimes winter is the driest time of the year; consider their origin; Laelias, oncidiums, epidendrums, catasetums, etc.

try to water, or fertilize, or wet as early in the day as possible so most can be dry by nightfall.

remember to check the pilot light and burners on your heater daily; a small mirror placed in the right position will aid a quick look.

start shaping plants for the coming Orchid shows — plan now. Read catalogues, order early — relax, and enjoy.

ROSES Frank Hastings

plant bare root roses, mixing ½ mulch with your soil. Add 3 cups bone meal to soil mixture.

prune roses to promote new cane and basil growth by removing the old canes and twiggy growth.

attend pruning demonstration at Balboa Park given by the San Diego Rose Society.

clean up debris and weeds after pruning.

dormant spray rose bushes and soil around bushes.

spread 2/3 cup of gypsum around established bushes, which will cleanse the soil of accumulated salts and open up clay soils for better drainage.

loosen up packed soils with a garden fork.

spread 2 shovel fulls of steer or other composted manure per bush. It will activate the bacteria in the soil, which is necessary to convert the nitrogen in the soil to food for the plant.

apply an inorganic balanced fertilizer in February. Water day before fertilizing and water in dry fertilizer after applying.

keep rose bushes watered twice a week unless at least 3/4 inch of rain falls.

VEGETABLES

set plants of broccoli, Brussels sprouts, cabbage, celery, cauliflower, chard, and collards any time the soil is dry enough to work.

start seeds indoors of spring vegetables that can be transplanted.

plant divisions of artichoke, roots of asparagus, and plants of fruiting berry vines, as soon as possible before the end of February.

search for new and superior varieties of spring and summer vegetables.

GREEN THUMB ITEMS

make marguerite cuttings from new tips. Remove lower leaves and insert cutting in rooting medium. Keep in shaded area until rooted.

start planting of gladiolus bulbs; make successive plantings at monthly intervals for flowers over a longer period of time.

cut chrysanthmums back to the ground.

plant hybrid amaryllis bulbs, with the tip of nose just showing, in a sunny or semi-shaded area.

plant bare-rooted trees.

prune flowering trees and shrubs. Pruning at this time will shape the plants and the flowers may be used in arrangements.

spray deciduous tres and shrubs with a combination insecticide and fungicide, such as oil and lime-sulphur, or copperas. Follow directions as given.

continue bait for slugs and snails.

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If It Isn't Sand, Does It Really Drain?

By California Association of Nurserymen

It seems that everytime we turn around someone is saying to be sure and place a plant in a spot that has good drainage. While we know that we aren't going to put it in a swamp, just what is meant by that ever elusive term, good drainage?

Many feel that only a sandy soil naturally has good drainage. Fortunately, sand is not really the answer. In fact, with the weather that we have in winter months, it should be really fairly easy for you to tell if you have well draining soil. If after a rain, water puddles all around in your flower beds and stays there awhile, then it is not well draining. On the contrary, if your yard can be easily dug into, and the soil breaks up and is not clumping within 48 hours of a normal rain, then you're safe. On the other hand, if you dig in and the soil is solid on the shovel, or even has water running off, you are in trouble.

Unfortunately, many parts of our state do have clay or clay-like soil such as adobe which is great for building an adobe house or perhaps for making pottery but for growing plants, it's the "pits!" However, there are a couple of bright sides to this multifaceted problem. Clay soil happens to be one of the richest of soils as far as food value for plants. The item missing is the bacteria found in humus which allows the nutrients to be released to the plants. The addition of humus is therefore in order for it not only releases food to the plants but also allows air into the soil which is needed by the plant's roots.

Plants require, on the average, 25% air in the soil for the roots to grow and for normal growth to exist. Naturally by increasing the air in soil, pathways are created for water to pass through. When those pathways remain clogged by overwatering, plants will die because the roots become suffocated. The best form of humus for a heavy soil would be the addition of compost or even peat moss. These would supply the bacteria needed and this stays in the soil for many years. If you just need to open up the soil, then use perlite, sponge rock, or gypsum. Be sure to check with your nurseryman for the most appropriate product for your particular needs. There are also liquid conditioners that can be used when the plants are in the lawn, for example, and you cannot dig in.

Other methods of having good drainage can be obtained by the use of raised beds or drainage lines placed in the area of greatest need. To mix any soil additive, it is important to use enough. This amount can vary from a low of 30% to as much as 70% if you are adding sand to a heavy soil. This may mean that for the area you are amending you will use a combination of a little gypsum, humus and compost to give you a quick fix with some lasting effect. Whatever needs to be done, remember that help is available at your local nursery.

The Thompson Begonia Museum Closed

By Millie and Ed Thompson

On February 22, 1982, the Thompson Begonia Museum opened after one year of planning. Our collection of more than 1500 species and cultivars of Begonia was displayed. The museum was open to the public 5 days a week and at other times by special appointment. We established this as a public place for people to study and observe many different begonias. It was also a place to perpetuate as many different begonias in cultivation as possible.

Unfortunately, on May 2, 1987, we found it necessary to close the museum permanently.

After the decision to close was made, we knew that we wanted to donate the collection to a large botanical garden so that there would be an attempt to preserve the collection. We made our decision to donate the collection to New York Botanical Garden and to donate duplicates of species and cultivars to Brooklyn Botanical Garden. Cuttings were also sent to Forth Worth Botanic Gardens, U.S. Botanic Garden, Longwood Gardens, and the Barkley Collection.

Editor's Note: Many of the begonia enthusiasts in California knew or were aware of the Thompson's collection, and San Diego Floral Association's library contains the book on Begonias written by the Thompsons.

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Under the sponsorship of the Park & Recreation Department, City of San Diego.
Meetings: 3rd Tuesday, February, April, June, October.
Casa del Prado, Balboa Park, San Diego, California

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P.O. Box 40037
San Diego, CA 92104
2nd Sun., Casa del Prado, 1:00 p.m.

SAN DIEGO BOTANICAL GARDEN FOUNDATION, INC.
Dr. Herbert A. Markowitz
224-8552
876 Armada Terrace
San Diego, CA 92106

SAN DIEGO BROMELIAD SOCIETY
Pres: Pam Keide 438-9393
6523 El Camino Real
Carlsbad, CA 92009
2235 Galahad Rd., Serra Mesa, 7:45 p.m.

SAN DIEGO CACTUS & SUCCULENT SOCIETY
Pres: Mr. Martin Mooney 427-6796
97 K Street, Chula Vista, CA 92011
2nd Sat., Casa del Prado, 1:30 p.m.

SAN DIEGO CAMELLIA SOCIETY
Pres: Charles Olson 222-9476
P.O. Box 34341
San Diego, CA 92103
3rd Wed., Casa del Prado, 7:30 p.m.

SAN DIEGO COUNTY BRANCH NATIONAL FUCHSIA SOCIETY
Pres: Mike Angelo (619) 729-3766
4910 Neblina Drive
Carlsbad, CA 92008
2nd Thurs., Palmquist School
1999 California St., Oceanside 7:00 p.m.

SAN DIEGO COUNTY DAHLIA SOCIETY
Pres: Leslie Pickford 278-1083
5350 Vla Bello
San Diego, CA 92111
4th Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO COUNTY ORCHID SOCIETY
Pres: Genie Hammond 426-6831
1341 Park Drive
Chula Vista, CA 92011
1st Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO DAYTIME AFRICAN VIOLET SOCIETY
Pres: Beverly Decker 469-9975
7430 Stanford Ave., La Mesa, CA 92041
2nd Mon., Fellowship Hall, Christ United Methodist Church, 3295 Meade, 12 noon

SAN DIEGO EPIPHYLLUM SOCIETY
Pres: Mr. Milton D. Turner 224-0955
2674 Willow Street
San Diego, CA 92106
2nd Wed., Casa del Prado, 7:30 p.m.

SAN DIEGO FERN SOCIETY
Pres: Bob Halley 272-1019
1714 Malden Street
San Diego, CA 92109
3rd Thurs., Casa del Prado, 7:30 p.m.

SAN DIEGO FUCHSIA & SHADE PLANT SOCIETY
Pres: Mr. Bob Matlock 423-0213
1333 New Chatel Drive
San Diego, CA 92154
2nd Mon., Casa del Prado, 7:30 p.m.

SAN DIEGO GERANIUM SOCIETY
Pres: Mr. Jim Zemcik (714) 551-3264
15442 Orleans Circle
Irvine, CA 92714
2nd Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO GESNERIAD SOCIETY
Ariel Madden (619) 299-5415
211 West Walnut Ave. #6
San Diego CA 92103
1st Thurs., Casa del Prado, 7:30 p.m.

SAN DIEGO/IMPERIAL COUNTIES IRIS SOCIETY
Pres: Dorothy Driscoll 463-6700
6338 Lake Athabaska Place
San Diego, CA 92119

SAN DIEGO ROSE SOCIETY
Mrs. Rita Applegate 463-3555
3976 Agua Dulce Blvd.
La Mesa, CA 92041
3rd Mon., Casa del Prado, 7:30 p.m.

SAN DIEGUITO GARDEN CLUB
Pres: Mrs. Hans (Pam) Kaspar
(619) 753-4087
1905 Hummock
Encinitas CA 92024
4th Wed., Ecke Family Bldg.
Quail Gardens, Encinitas, 10 a.m.

SAN MIGUEL BRANCH AMERICAN BEGONIA SOCIETY
Pres: Mrs. Toni Baker (619) 582-7516
6475 - 50th Street
San Diego CA 92120
1st Wed., Casa del Prado, Rm. 104, 7:30 p.m.

SOGETSU SCHOOL OF IKEBANA
Pres: Mrs. Leroy Lahey 429-6198
2829 Flax Drive
San Diego, CA 92154

SOUTHWEST GROUP, JUDGES COUNCIL
Pres: Mrs. David W. Hoke
335 Avenida de las Roses
Encinitas, CA 92024
1st Wed., Casa del Prado, 10:00 a.m.

SOUTHWEST HEMEROCALLIS SOCIETY
Pres: Mr. C.R. Bowman 273-7937
3927 Sequoia Street
San Diego, CA 92109
1st Sat., Feb., Apr., Jun., Sep., Nov.
10 a.m. Quail Gardens Meeting Room
Quail Gardens Rd., Encinitas

SUN HARBOR BRANCH NATIONAL FUCHSIA SOCIETY
Pres: Barney Gonsalves (619) 222-4254
4103 Tennyson Street
San Diego, CA 92107
4th Wed. Recreation Hall, Holy Trinity Church
2083 Sunset Blvd., Ocean Beach

THE VILLAGE GARDEN CLUB OF LA JOLLA
Pres: Dorothy C. Carroll 578-1484
8304 Hydra Lane
San Diego, CA 92126
4th Thurs., La Jolla United Methodist
6063 La Jolla Blvd., La Jolla 1:00 p.m.

THE VISTA GARDEN CLUB
Pres: Mrs. Robert Hendenberg 724-5032
4809 Ceanothus Place
Oceanside CA 92056
1st Fri., at 222 Jefferson St., Vista
Senior Service Center, 12 noon

THE WATER LILY SOCIETY
Pres: Dr. Kirk Strawn (301) 662-2230
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